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A NEW SPECIES OF DRAGONET, *SYNCHIROPUS RANDALLI,* FROM EASTER ISLAND (TELEOSTEI: CALLIONYMIDAE)

Guy T. Clark and Ronald Fricke

Abstract.—A new species of dragonet, *Synchiropus randalli,* is described from a male and two females collected at Easter Island. It is most closely related to *S. kiyoae* Fricke & Zaiser, 1983, from Japan. The new species is characterized by a first dorsal fin that is dusky except for two white blotches on the first membrane in the male, white blotches on the pelvic fin, a band of black and white blotches along the sides of the body, a third spine of the male's first dorsal fin which is much shorter than the first and second spines, a shorter caudal fin, and a broader interorbital space.

Easter Island is of interest to biologists because of its isolated geographic position at the easternmost fringe of Polynesia (27°08'S, 109°23'W). Although relatively little is known of its fish fauna (Allen 1970), it appears to have a high rate of endemics, about 27.5% of the 109 recorded species (Randall 1970, 1973, 1976). The most recent collections are those of Ian Efford and associates during the Canadian Medical Expedition in 1964–1965, and Randall and Allen in 1969. Prior to these only 40 species had been recorded (Allen 1970).

Within the material collected by J. E. Randall and G. R. Allen in 1969, were included specimens of a previously undescribed species of the *postulus* species-group of the dragonet genus *Synchiropus* Gill, 1860 (Fricke 1981, 1983). Other species of this species-group are *S. kiyoae* Fricke & Zaiser, 1983, from Japan, *S. laddi* Schultz, 1960, from the western and central Pacific, *S. minutulus* Fricke, 1981, from the central Indian Ocean, *S. postulus* Smith, 1963, from the western Indian Ocean, and *S. springeri* Fricke, 1983, from Fiji.

Methods follow Fricke (1983). The type-material of the new species is deposited in the Bernice P. Bishop Museum, Honolulu (BPBM), and the National Museum of Natural History, Smithsonian Institution, Washington, D.C. (USNM).

Synchiropus randalli, new species
Fig. 1

Holotype.—BPBM 6754, male, 22.0 mm SL, Easter Island, west coast off southern end of Hanga Roa, sand near rocks 27°09.5'S, 109°27'W, 40 feet (12 m) depth, J. E. Randall and G. R. Allen, 10 Feb 1969.

Paratypes.—Same data as holotype. BPBM 26409, 1 female, 20.9 mm SL; USNM 221485, 1 female, 18.6 mm SL.

Diagnosis.—A *Synchiropus* of the *postulus* species-group with 4 spines in the first dorsal fin, 9 rays in the second dorsal fin, 8 rays in the anal fin, 19–20 pectoral fin rays, a preopercular spine formula—$\frac{4\text{–}5}{-}$ 1, the first dorsal fin of the male dusky (except for two white blotches on the first membrane), with the third spine much

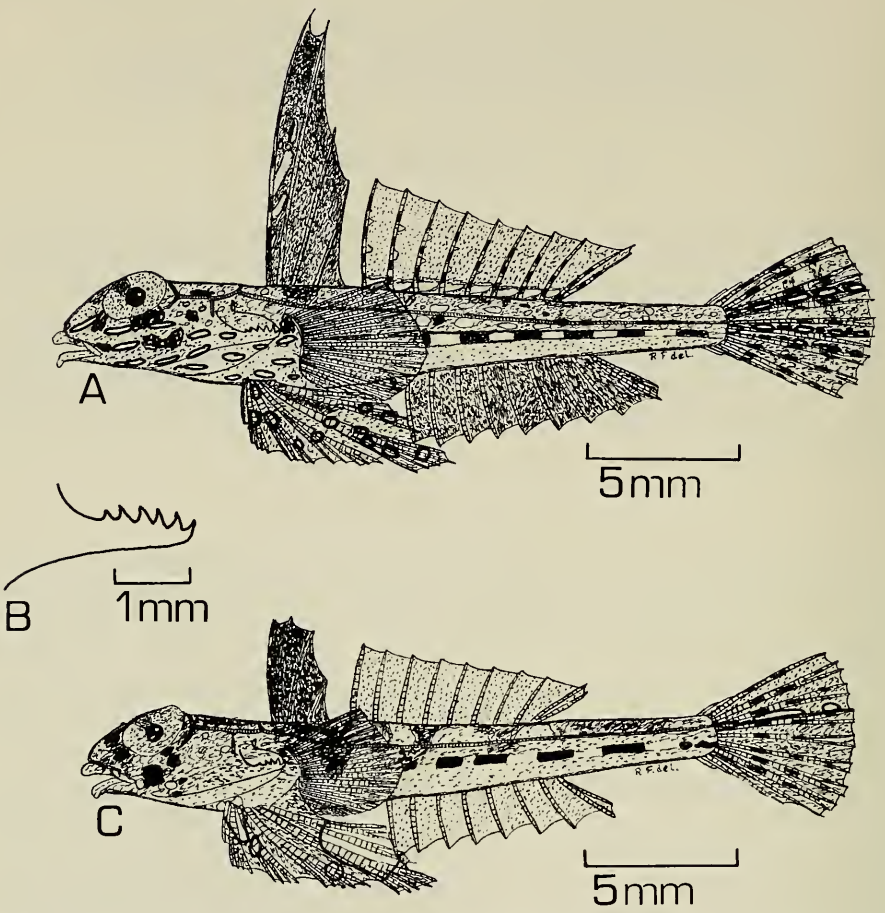

Fig. 1. *Synchiropus randalli,* new species, Easter Island. BPBM 6754, holotype, male, 22.0 mm SL: A, Lateral view; B, Left preopercular spine. BPBM 26409, paratype, female, 20.9 mm SL: C, Lateral view.

shorter than the first and second spines, the first dorsal fin of the female higher than the second dorsal fin, the male with light blue blotches on the sides of the head, both sexes with a black and white band along the sides of the body and with white blotches on the pelvic fin, and with the caudal fin 4.5–4.6 in SL.

Description.—D_1 IV; D_2 viii,1; A vii,1; P_1 i,16–17, ii (totally 19–20); P_2 I,5; C (i–ii), i,7, ii (i–ii). Proportions of the holotype and the larger female paratype see Table 1.

Body elongate and slightly compressed. Head slightly depressed (females) or slightly compressed (male), 3.5–3.9 in SL. Body depth 6.6–7.7 in SL. Eye diameter 2.5–2.9 in HL. Preorbital length 3.6–3.9 in HL. Interorbital distance 4.2–6.0 in eye. Occipital region with smooth bony plate. Branchial opening sublateral in position. Preopercular spine length 3.4–4.3 in HL; preopercular spine with up-curved main tip, smooth ventral margin, no antrorse spine at its base, and 4–5 curved points on its dorsal margin (formula—$\frac{4\text{–}5}{-}$ 1; see Fig. 1B). Urogenital

Table 1.—Proportions of the male holotype and one female paratype of *Synchiropus randalli*, new species (expressed as hundredths of SL).

	Holotype	Paratype, BPBM 26409
Predorsal (1) length	31.04	29.86
Predorsal (2) length	45.02	41.81
Preanal fin length	52.12	48.16
Prepelvic fin length	27.08	21.79
Head length	25.58	28.57
Body depth	15.16	13.09
Caudal peduncle length	20.89	19.59
Caudal peduncle depth	6.24	5.06
Caudal fin length	21.89	22.02
Eye diameter	9.97	9.94
Preorbital length	7.10	7.36
Urogenital papilla	1.14	—
First D_1 spine length	42.60	15.86
First D_2 ray length	16.70	11.99
Last D_2 ray length	14.02	9.84
First A ray length	11.20	9.46
Last A ray length	11.92	10.08
Pectoral fin length	15.84	14.52
Pelvic fin length	34.36	35.45

papilla elongate in male, 22.5 in HL; not visible in female. Lateral line reaching from preorbital region to end of third branched caudal fin ray (counted from above), with short suborbital and short preopercular branch, as well as short ventral branch above pectoral fin base; lateral lines of opposite sides interconnected by commissure across occipital region. Caudal peduncle length 4.8–5.1 in SL. Caudal peduncle depth 16.0–19.8 in SL.

First dorsal fin very high in male, first to third spines elongate, with very short filaments, first spine 0.6 in HL, third spine shorter than first and second spines; in female relatively high, first to third spines elongate but not filamentous, longer than first ray of second dorsal fin, first spine 1.8 in HL. Predorsal (1) length 3.22–3.35 in SL. Second dorsal fin distally straight (female) or slightly convex (male), first ray in male 1.53 in HL, in female 2.38 in HL. Last ray in male 1.82, in female 2.90 in HL. Rays unbranched except for last which is divided at its base. Predorsal (2) length 2.22–2.39 in SL. Anal fin beginning on vertical through base of second membrane of second dorsal fin. Last anal fin ray in male 2.14 in HL, in female 2.83 in HL. Rays unbranched except for last which is divided at its base. Preanal fin length 1.92–2.08 in SL. Pectoral fin distally convex, reaching back to base of first anal fin membrane. Pelvic fin large, fourth ray elongate, reaching back to base of third anal fin membrane. Pelvic fin length 0.74–0.81 in HL. Pelvic fin connected with mid-base of pectoral fin by membrane. Prepelvic fin length 3.69–4.59 in SL. Caudal fin distally convex. Caudal fin length 4.5–4.6 in SL.

Color in alcohol.—Head and body brown, back with few dark brown saddles and dark brown and whitish spots. Ventral portions of body whitish in both sexes. Side of head with dark brown blotches; in male also with ocellate dark streaks which are light blue in fresh specimens. Side of body below lateral line with band

Table 2.—Comparison between *Synchiropus randalli,* new species and *S. kiyoae* Fricke & Zaiser, 1983.

	S. randalli	*S. kiyoae*
Body depth in SL	4.9–6.9	6.6–7.4
Interorbital in eye	4.3–5.9	6.3–24.1
Predorsal (2) length in SL	2.2–2.4	1.8–2.24
Caudal fin length in SL	4.5–4.6	3.0–3.8
Third D_1 spine (male)	much shorter than 2nd spine	subequal to 2nd spine
First dorsal fin (male)	dusky, with light blotches on 1st membrane	light, with elongate vertical dark streaks and blotches
First dorsal fin (female)	1st membrane dusky	1st membrane whitish, distal one-third dusky
Caudal fin	with 2 rows of white blotches	without white blotches
Pelvic fin	with white blotches	without white blotches
Anal fin (female)	translucent, without blotches	with a dark brown blotch distally on each membrane
Sides of head (male)	with oval light blue blotches	with ocellate light blue streaks

consisting of alternating black and white blotches. Eye brown, with dark brown spot in its upper rostral section. First dorsal fin dusky in both sexes, in male with two light blotches on first membrane. Second dorsal fin translucent, in male with about three dark brown spots on each ray, and with basal dusky (in fresh specimens blue) blotch on each membrane. Anal fin dusky in male, translucent in female. Caudal fin with 1–2 median horizontal rows of white blotches, and about three vertical rows of dark brown spots on rays. Pectoral fin translucent; pelvic fin with white blotches.

Sexual dimorphism.—Males have a higher first dorsal fin than females, the first and second spines being much longer than the third, a longer urogenital papilla, and a different color pattern of the second dorsal and anal fins and of the sides of the head.

Distribution.—This species is apparently endemic to Easter Island. No *Synchiropus* of the *postulus* species-group has been recorded from Pitcairn Island, Ducie Atoll Rapa, or any other islands near Easter Island. It has been collected at a depth of 12 meters, which is about the same depth at which *S. kiyoae* occurs in Japan (5–13.5 m).

Etymology.—This new species is named in honor of Dr. John E. Randall, whose contributions considerably increased our knowledge of the ichthyofauna of Easter Island, and who collected the type-material of the new species.

Comparisons.—*Synchiropus randalli* is compared with the most closely related species, *S. kiyoae* Fricke & Zaiser (1983:122–128, figs. 1–2; Fricke 1983:603–608, fig. 185), in Table 2. It differs from *Synchiropus laddi* Schultz (1960:406–409, fig. 131; Fricke 1981:124–126, fig. 39; Fricke 1983:608–611, fig. 187) in the proportions of the first dorsal fin spines in the male (in *S. laddi* second spine subequal to third, first spine shorter), in the first dorsal fin which is lower than the second dorsal fin, and in the general color pattern (*S. laddi*: completely pale, except for the eye and two ventral black spots on each side of the body). *Synchiropus randalli* can be distinguished from *S. minutulus* Fricke (1981:119–123,

fig. 38; Fricke 1983:624–627, fig. 192) by the same characters as from *S. laddi*. *Synchiropus postulus* Smith (1963:560, fig. 7, pl. 86E; Fricke 1981:116–118, fig. 37; Fricke 1983:658–660, fig. 203) is distinguished by the proportions of the first dorsal fin spines of the male (second and third spines longest, first spine shorter), by the presence of long filaments in that fin, by the first dorsal fin of the female which is lower than the second dorsal fin, and by the general color pattern. *Synchiropus springeri* Fricke (1983:673–677, fig. 208) differs in the proportions of the first dorsal fin of the female (which is lower than the second dorsal fin), the bright rose pink occipital region, and the color pattern of the head, the body, and the pelvic fin. The two species of the *ocellatus* species-group of the genus *Synchiropus* occurring in the central Pacific, *S. ocellatus* (Pallas, 1770) (Fricke 1983:635–642, fig. 197, east to Marquesas Islands and Pitcairn) and *S. morrisoni* Schultz, 1960 (Fricke, 1983:630–635, figs. 195–196, east to Marshall and Fiji islands), differ from *S. randalli* in having eight rays in the second dorsal fin, seven rays in the anal fin, preopercular spine formulae of $-\frac{1-2}{-}$ 1, and completely different color patterns.

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(GTC), 533 New York Ave., Norfolk, Virginia 23508; (RF), Staatliches Naturhistorisches Museum, D-3300 Braunschweig, Federal Republic of Germany.